Inspection Report For Well: UT20736 - 04495

U.S. Environmental Protection Agency
Underground Injection Control Program, 8ENF-T
999 18th Street, Suite 300, Denver, CO 80202-2466
This form was printed on 9/24/2013

INSPECTOR(S): Lead: Roberts, Sarah — Date: ~~10~~ 12/11/2013
Others: Ajayi, Christopher — Time: 9:22 (am) / pm

OPERATOR (only if different): _____

REPRESENTATIVE(S): Chad Stevinson

PRE-INSPECTION REVIEW

Petroglyph Operating Company, Inc

Well Name:	Ute Tribal 07-14		
Well Type:	Enhanced Recovery (2R)		
Operating Status:	AC (ACTIVE) as of 12/31/2002		
Oil Field:	Antelope Creek (Duchesne)		
Location:	SESW S7 T5S R3W		
Indian Country:	X, Uintah and Ouray		
Last Inspection:	8/29/2012	***Allowable Inj Pressure:***	1140 /
Last MIT:	Pass 12/29/2010	***Annulus Pressure From Last MIT:***	630

BLACK = POSSIBLE VIOLATION GREY = DATA MISSING

INSPECTION TYPE: (Select One)
☐ Construction / Workover ☐ Response to Complaint ☐ Other
☐ Plugging ☒ Routine
☐ Post-Closure ☐ Witness MIT

ICIS Entered
Date 12/31/13
Initials DB

OBSERVED VALUES:

Tubing Gauge:	☒ Yes ☐ No	Pressure: U: 1057 / L: ____ psig	Gauge Range: Scada psig	Gauge Owner:	☐ EPA ☒ Operator
Annulus Gauge:	☒ Yes ☐ No	Pressure: 0 psig	Gauge Range: opened psig	Gauge Owner:	☒ EPA ☐ Operator
Bradenhead Gauge:	☐ Yes ☐ No	Pressure: ____ psig	Gauge Range: ____ psig	Gauge Owner:	☐ EPA ☐ Operator
Pump Gauge:	☐ Yes ☐ No	Pressure: ____ psig	Gauge Range: ____ psig	Gauge Owner:	☐ EPA ☐ Operator

Operating Status: (Select One) ☑ Active ☐ Not Injecting ☐ Plugged and Abandoned ☐ Being Reworked ☐ Production ☐ Under Construction

U2 Entered
Date 12/17/13
Initial

See page 2 for photos, comments, and site conditions.

TAB	GREEN	BLUE	CBI
		1	

Inspection Report For Well: UT20736 - 04495 (PAGE 2)

PHOTOGRAPHS: ☐ Yes ☒ No List of photos taken: _____

Comments and site conditions observed during inspection: _____

GPS: GPS File ID: _____

Signature of EPA Inspector(s): _____

☐ Data Entry ☐ Compliance Staff ☐ Hard Copy Filing

NOTICE OF INSPECTION

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII, 999 18TH STREET - SUITE 500
DENVER, COLORADO 80202-2405

Date: 12/16/13
Hour: 8:00a

Notice of inspection is hereby given according to Section 1445(b) of the Safe Drinking Water Act (42 U.S.C. §300f et seq.).

Firm Name: Petroglyph Operating Inc

Firm Address: Roosevelt, UT, Antelope Creek Oil Field

REASON FOR INSPECTION:

For the purpose of inspecting records, files, papers, processes, controls and facilities, and obtaining samples to determine whether the person subject to an applicable underground injection control program has acted or is acting in compliance with the Safe Drinking Water Act and any applicable condition of permit or rule authorization.

SECTION 1445(b) of the SAFE DRINKING WATER ACT is quoted below:

Section 1445(b)(1): Except as provided in Paragraph (2), the Administrator, or representatives of the Administrator duly designated by him, upon presenting appropriate credentials, and a written notice to any supplier of water or other person subject to (a), or person subject (A) a national primary drinking water regulation prescribed under Section 1412(B) an applicable Underground Injection Control Program, or (C) any requirement to monitor an unregulated contaminant pursuant to subsection (a), or person in charge of any of the property of such supplier or other person referred to in clause (A), (B), or (C), is authorized to enter any establishment, ... facility, or other property of such supplier or other person in order to determine whether such supplier or other person has acted or is acting in compliance with this title, including for this purpose, inspection, at reasonable times, of records, files, papers, processes, controls, and facilities, or in order to test any feature of a public water system, including its raw water source. The Administrator or the Comptroller General (or any representative designated by either) shall have access for the purpose of audit and examination to any records, reports, or information of a grantee which are required to be maintained under subsection (a) or which are pertinent to any financial assistance under this title.

Sarah Roberts
Inspector's Name & Title (Print)

Inspector's Signature

EPA R8 3560-1 (8-89)

Original - Regional Office Copy
Yellow Copy - Operator Copy

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466

OCT 25 2000

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Micheal Safford
Operations Coordinator
Petroglyph Operating Company, Inc.
P.O. Box 607
Roosevelt, UT 84066

RE: **Additional Well to Area Permit**
Antelope Creek Waterflood
EPA Area Permit No. UT2736-00000
Duchesne County, Utah

Dear Mr. Safford:

Your letter of May 2, 2000, requested that the following production well be converted to a Class II enhanced oil recovery well and added to the Antelope Creek Waterflood. As authorized under EPA Area Permit No. UT2736-00000, your request is hereby granted.

NAME	LOCATION	EPA WELL PERMIT NO.
Ute Tribal #07-14	SE SW Section 7 T 5 S - R 3 W Duchesne County, UT	UT2736-04495

This additional well is within the boundary of the existing Area Permit for the Antelope Creek Waterflood (UT2736-00000), and this addition is made under the provisions of 40 CFR §144.33 and the terms and conditions of the original Permit. The proposed well location, well schematic, conversion procedures with/schematic, Cement Bond Log (CBL), and Financial Responsibility Demonstration, submitted by your office, have been reviewed and approved as follows:

(1) The **revised conversion** plan with schematic for this production well has been reviewed, and found satisfactory. EPA analysis of the CBL for this well **could not determine that the annulus cement in the Ute Tribal #07-14** would provide an effective barrier to significant upward movement of fluids through vertical channels to the wellbore; (Part II MI) pursuant to

40 CFR § 146.8 (a)(2). For your review in selecting which "external" mechanical integrity test to conduct on the Ute Tribal #07-14, please refer to the enclosed **GROUND WATER SECTION GUIDANCE NO. 37: Demonstrating Part II (External)** mechanical for a Class II injection well Permit.

Please call Mr. Dan Jackson, of my staff, for consultation in your selection of **Part II "external" mechanical integrity**, and the possibility of receiving authorization to inject for a limited period for the purpose of stabilizing the injection zone prior to initiating an "external" mechanical integrity investigation. The limited period would not exceed 180 days.

(2) **Maximum injection pressure (MIP)** - please reference the Final Area Permit UT2736-00000, Part II. Section C.5.(b) "the maximum surface injection pressure (MIP) shall not exceed **1900 psig". Until such time that a step-rate injectivity test (SRT) has been performed and approved by the EPA, the initial maximum surface injection pressure (MIP) for the Ute Tribal #07-14 shall not exceed 1900 psig.**

Final Area Permit (UT2736-00000), has provisions whereby the permittee may request an increase, or decrease, in the maximum surface injection pressure.

(3) The **plugging and abandonment plan and schematic,** submitted by your office, has been reviewed, and approved.

(4) **Financial Responsibility Demonstration:** the applicant has chosen to demonstrate financial responsibility for the Ute Tribal #07-14 through a Surety Performance Bond #1936, in the amount of $15,000 per well, and Bond Rider No.1, that has been reviewed and approved by the EPA.

Underground Sources of Drinking Water (USDWs). The base of the USDWs in the Ute Tribal #07-14 is approximately 1,137 feet below ground level and is located within the Uinta Formation. The source for this USDW information is formation water analyses submitted by the operator for twenty-two (22) wells within the initial AOR, and from Publication No. 92 (1987), prepared jointly by the USGS and the Utah of Oil, Gas, and Mining.

Injection Interval: Fluid injection shall be limited to the gross zones within the Green River Formation between the approximate depths of 3,939 feet (Top of "B" Marker) and 5,926 feet (Basal Carbonate). The injection (perforated) zones from 4,103 feet to 5,675 feet within this portion of the Green River Formation, are comprised of porous and permeable lenticular calcareous sandstones interbedded with low permeability carbonates and calcareous shales. The lenticular sandstones vary in thickness from 1 to 30 feet and are individually separated by shale which act as isolation barriers (confining zones) for the waterflood.

Confining Zone: The overall confining zone above the top injection interval, is identified in this well from 3,939' to 3,814', and is overlain by impermeable Upper Green River Formation calcareous sandy lacustrine shales and continuous beds of microcrystalline dolomite.

Prior to commencing injection into this well, permittee must fulfill Permit condition PART II, C. 2. and have submitted to the EPA for review and approval, the following:

(1) All conversion is complete and the permittee has submitted a completed **Well Rework Record (EPA Form 7520-12)**; and

(2) The **pore pressure has been determined; and**

(3) The well has successfully completed and passed **Part I (internal) of the mechanical integrity test (MIT) with pressure chart and Part II (external) mechanical integrity. An EPA form is enclosed along with current MIT guidance.**

Please be aware that Petroglyph does not have authorization to begin injection into the Ute Tribal #07-14 until the items listed above have been approved by the EPA and Petroglyph has received written authorization to begin injection from the EPA.

All other provisions and conditions of the Permit remain as originally issued July 12, 1994, and revised April 30, 1998.

If you have any questions, please contact Mr. Dan Jackson at 303.312.6155. Also, please direct the above requirements to the Ground Water Program Director at the above letterhead address, citing **MAIL CODE 8P-W-GW.** Thank you for your continued cooperation.

Sincerely,

Kerrigan G. Clough
Assistant Regional Administrator
Office of Partnerships and
Regulatory Assistance

Enclosure: Mechnical Integrity Test Form (MIT)
Current MIT Guidance No. 37

cc: Mr. Roland McCook, Chairman
Uintah & Ouray Business Committee

Ms. Elaine Willie, Environmental Director
Ute Indian Tribe

Norman Cambridge
BIA - Uintah & Ouray Agency

Mr. Jerry Kenczka
BLM - Vernal District Office

Mr. Gilbert Hunt
State of Utah Natural Resources
Division of Oil, Gas & Mining

Mechanical Integrity Test
Casing or Annulus Pressure Mechanical Integrity Test

U.S. Environmental Protection Agency
Underground Injection Control Program, UIC Direct Implementation Program 8P-W-GW
999 18th Street, Suite 500 Denver, CO 80202-2466

EPA Witness: _____ Date: ____/____/____

Test conducted by: _____

Others present: _____

Well Name:_____ Type: ER SWD Status: AC TA UC

Field:_____

Location:_____ Sec:____ T____N / S R____E / W County:_____State:___

Operator:_____

Last MIT: ____/____/____ Maximum Allowable Pressure: _____ PSIG

Is this a regularly scheduled test? [ ] Yes [ ] No

Initial test for permit? [ ] Yes [ ] No

Test after well rework? [ ] Yes [ ] No

Well injecting during test? [ ] Yes [ ] No If Yes, rate: _____ bpd

Pre-test casing/tubing annulus pressure: _____ psig

MIT DATA TABLE	Test #1	Test #2	Test #3
TUBING PRESSURE			
Initial Pressure	psig	psig	psig
End of test pressure	psig	psig	psig
CASING / TUBING ANNULUS PRESSURE			
0 minutes	psig	psig	psig
5 minutes	psig	psig	psig
10 minutes	psig	psig	psig
15 minutes	psig	psig	psig
20 minutes	psig	psig	psig
25 minutes	psig	psig	psig
30 minutes	psig	psig	psig
minutes	psig	psig	psig
minutes	psig	psig	psig
RESULT	**[ ] Pass [ ]Fail**	**[ ] Pass [ ]Fail**	**[ ] Pass [ ]Fail**

Does the annulus pressure build back up after the test ? [ ] Yes [ ] No

(over)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

AUG - 9 1995

SUBJECT: GROUND WATER SECTION GUIDANCE NO. 37
Demonstrating Part II (external) Mechanical Integrity for a Class II injection well permit.

FROM: Tom Pike, Chief
UIC Direct Implementation Section

TO: All Section Staff
Montana Operations Office

During the review for a Class II injection well permit, consideration must be given to the mechanical integrity (MI) of the well. MI demonstrates that the well is in sound condition and that the well is constructed in a manner that prevents injected fluids from entering any formation other than the authorized injection formation.

A demonstration of MI is a two part process:

PART I - **INTERNAL MECHANICAL INTEGRITY** is an assurance that there are no significant leaks in the casing/tubing/packer system.

PART II - **EXTERNAL MECHANICAL INTEGRITY** demonstrates that after fluid is injected into the formation, the injected fluids will not migrate out of the authorized injection interval through vertical channels adjacent to the wellbore.

A Class II injection well may demonstrate Part II MI by showing that injected fluids remain within the authorized injection interval. This may be accomplished as follows:

1) Cement bond log showing 80% bond through the an appropriate interval (Section Guidance 34),

2) Radioactive tracer survey conducted according to a EPA-approved procedure, or

3) Temperature survey conducted according to a EPA-approved procedure (Section Guidance 38).

For each test option above, the operator of the injection well should submit a plan for conducting the test. The plan will then be approved (or modified and approved) by EPA. EPA's pre-approval of the testing method will assure the operator that the test is conducted consistent with current EPA guidance, and that the test will provide meaningful results.

Part II MI may be demonstrated either before or after issuing the Final Permit. However, if Part II is to be demonstrated after the Final Permit is issued, a provision in the permit will require the demonstration of Part II MI. The well will also be required to pass Part II MI prior to granting authorization to inject.

Radioactive tracer surveys and temperature surveys require that the well be allowed to inject fluids as part of the procedure. In these cases, a well that has shown no other demonstration of Part II MI will be allowed to inject only that volume of fluid that is necessary to conduct the appropriate test.

After the results of the test proves that the well has passed Part II MI, the well will be given authorization to begin full injection operations.

If any of the tests show a lack of Part II MI, the well will be repaired and retested, or plugged (See Headquarters Guidance #76).

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466
http://www.epa.gov/region08

MAR 1 2001 CONCURRENCE COPY

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Micheal Safford
Operations Coordinator
Petroglyph Operating Company, Inc.
P.O. Box 607
Roosevelt, UT 84066

RE: **Limited Authorization to Inject**
Ute Tribal #07-14
EPA Area Permit No. UT2736-00000
EPA Well Permit No. UT04495
Duchesne County, Utah

Dear Mr. Safford:

On December 14, 2000, Petroglyph Operating Company, Inc. (Petroglyph) submitted information required to fulfill the Environmental Protection Agency's (EPA) **Prior to Commencing Injection (Additional Wells)** requirements in the above-referenced Final Area Permit and Authorization to Add an Additional Well to the Area Permit. The **Part I (Internal) Mechanical Integrity** pressure test of November 11, 2000, a Well Rework Record (EPA Form No. 7520-12), and injection zone pore pressure determination have been reviewed and approved by the EPA.

EPA is hereby authorizing injection into the Ute Tribal #07-14 for a **limited period of up to one hundred eighty (180) calendar days**, effective upon receipt of this letter, herein referred to as the **'limited authorized period'**.

Because the cement bond log submitted for this well did not show an adequate interval of 80% or greater bond index through the confining zone above the perforated intervals (3,814 to 3,939'), the operator also is required to demonstrate **Part II (External) Mechanical Integrity (Part II MI)** within the limited authorized period. The demonstration shall be by temperature survey or other approved test. Approved tests for demonstrating

CEW 3/1/01

CHamp 8P-W-GW 3/1/2001

8P-W-GW mailed 3/01/01 CEW

Part II MI include a temperature survey, noise log or oxygen activation log, and Region 8 may also accept results of a radioactive tracer survey (RATS) under certain circumstances. The limited authorized period allows injection for the purpose of stabilizing the injection formation pressure prior to demonstrating Part II MI, which is necessary because the proposed injection zone may be under pressured due to previous oil production from the zone, and the tests rely on stable formation pressure. Results of tests shall be submitted to, and written approval with authority to re-commence injection received from, EPA prior to resuming injection following the limited authorized period. A copy of Region 8 guideline for conducting a temperature survey is enclosed with this letter.

An initial maximum surface injection pressure (MIP) **not to exceed 1900 psig** was determined for wells within Area Permit UT2736-00000. Please note that the maximum pressure used during the temperature survey or other approved test becomes the final permitted maximum injection pressure, or MIP, because Part II MI was demonstrated at that pressure. Therefore, it may be advantageous to run a step rate test (SRT) prior to conducting the temperature survey or other approved test.

Should the operator apply for an increase to the MIP at any future date, another demonstration of Part II MI must be conducted in addition to the step rate test. The operator must receive prior authorization from the Director in order to inject at pressures greater than the permitted MIP during the test(s).

If you have any questions in regard to the above action, please contact Paul Osborne at 303.312.6125. Results from temperature log or other Part II MI test should be mailed directly to the Ground Water Program Director, Mail Code 8P-W-GW.

Sincerely,

D. Edwin Hogle
Director
Ground Water Program

enclosure: Region 8 Guideline for conducting a temperature survey

cc w/o enclosures:

Mr. Roland McCook
Chairman
Uintah & Ouray Business Council

Ms. Elaine Willie
Environmental Director
Ute Indian Tribe

Mr. Gil Hunt
State of Utah Natural Resources
Division of Oil, Gas, and Mining

Mr. Jerry Kenczka
Bureau of Land management
Vernal District Office

Mr. Nathan Wiser, ENF-T
USEPA

OMB No. 2040-0042 Approval Expires 11/30/2014

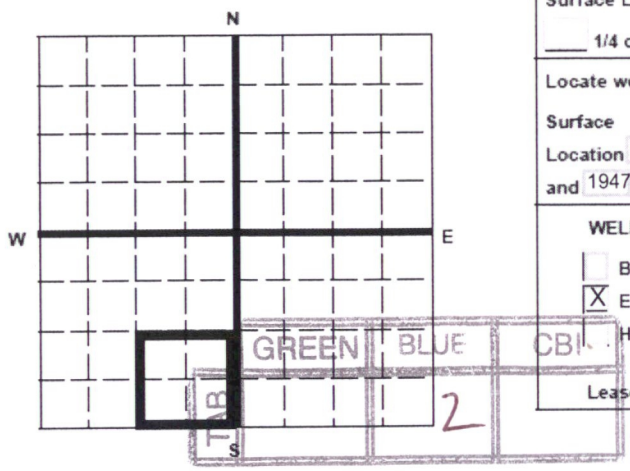
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah, 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-04495

Surface Location Description
___ 1/4 of ___ 1/4 of SE 1/4 of SW 1/4 of Section 7 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 559 ft. frm (N/S) S Line of quarter section
and 1947 ft. from (E/W) W Line of quarter section.

U2 Entered
Date 3/29/17
Initial DB

WELL ACTIVITY	TYPE OF PERMIT
[ ] Brine Disposal	[ ] Individual
[X] Enhanced Recovery	[X] Area
[ ] Hydrocarbon Storage	Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 07-14

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	16	995	1031	255		0	0
February	16	1059	1059	367		0	0
March	16	1067	1089	436		0	0
April	16	1049	1095	362		0	0
May	16	1051	1071	325		0	0
June	16	996	1081	297		0	0
July	16	1042	1042	344		0	0
August	16	1035	1035	365		0	0
September	16	1019	1023	384		0	0
October	16	1025	1059	411		0	0
November	16	1079	1079	302		0	0
December	16	1090	1092	316		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		03/21/2017

EPA Form 7520-11 (Rev. 12-11)

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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A HALLIBURTON SERVICE

Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 07-14 INJ, TT, DUCHESNE**	Lab Tech:	**Kaitlyn Natelli**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2017**		
Sample ID:	**WA-345311**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics

Test Date:	1/25/2017
System Temperature 1 (°F):	300
System Pressure 1 (psig):	2000
System Temperature 2 (°F):	130
System Pressure 2 (psig):	50
Calculated Density (g/ml):	0.9991
pH:	7.00
Calculated TDS (mg/L):	2265.85
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	118.00
H_2S in Gas (%):	
H2S in Water (mg/L):	10.00
Tot. SuspendedSolids(mg/L):	
Corrosivity(LanglierSat.Indx)	0.00
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	60.80	Chloride (Cl):	603.00
Potassium (K):	5.03	Sulfate (SO_4):	80.00
Magnesium (Mg):	24.66	Bicarbonate (HCO_3):	732.00
Calcium (Ca):	49.53	Carbonate (CO_3):	
Strontium (Sr):	1.48	Hydroxide(HO):	
Barium (Ba):	2.47	Acetic Acid (CH_3COO)	
Iron (Fe):	396.36	Propionic Acid (C_2H_5COO)	
Zinc (Zn):	297.99	Butanoic Acid (C_3H_7COO)	
Lead (Pb):	0.00	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Ammonia NH_3:		Fluoride (F):	
Manganese (Mn):	0.44	Bromine (Br):	
Aluminum (Al):	0.91	Silica (SiO_2):	12.09
Lithium (Li):	2.60	Calcium Carbonate ($CaCO_3$):	
Boron (B):	1.24	Phosphates (PO_4):	12.44
Silicon (Si):	5.65	Oxygen (O_2):	

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	0.17	9.01	0.92	1.29	4.19	9.32	3.11	219.41	0.00	0.00	0.00	0.00	0.00	0.00	11.73	10.33
149.00	267.00	0.25	12.78	0.83	1.25	4.17	9.32	3.22	221.84	0.00	0.00	0.00	0.00	0.00	0.00	11.51	10.33
168.00	483.00	0.38	18.15	0.76	1.21	4.22	9.32	3.37	224.71	0.00	0.00	0.00	0.00	0.00	0.00	11.36	10.33
187.00	700.00	0.52	23.22	0.71	1.18	4.29	9.32	3.52	227.22	0.00	0.00	0.00	0.00	0.00	0.00	11.24	10.33
206.00	917.00	0.66	27.79	0.67	1.15	4.37	9.32	3.67	229.40	0.00	0.00	0.00	0.00	0.00	0.00	11.14	10.33
224.00	1133.00	0.82	31.72	0.65	1.14	4.48	9.32	3.82	231.27	0.00	0.00	0.00	0.00	0.00	0.00	11.07	10.33
243.00	1350.00	0.99	34.92	0.65	1.14	4.60	9.32	3.96	232.88	0.00	0.00	0.00	0.00	0.00	0.00	11.01	10.33
262.00	1567.00	1.16	37.43	0.65	1.14	4.74	9.32	4.10	234.27	0.00	0.00	0.00	0.00	0.00	0.00	10.97	10.33
281.00	1783.00	1.33	39.29	0.67	1.15	4.89	9.32	4.23	235.45	0.00	0.00	0.00	0.00	0.00	0.00	10.95	10.33
300.00	2000.00	1.52	40.63	0.69	1.17	5.05	9.32	4.36	236.46	0.00	0.00	0.00	0.00	0.00	0.00	10.94	10.33

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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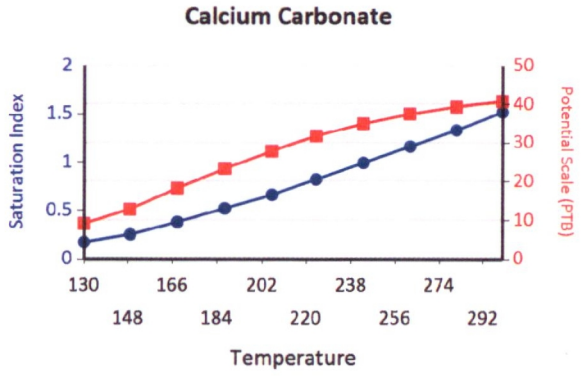
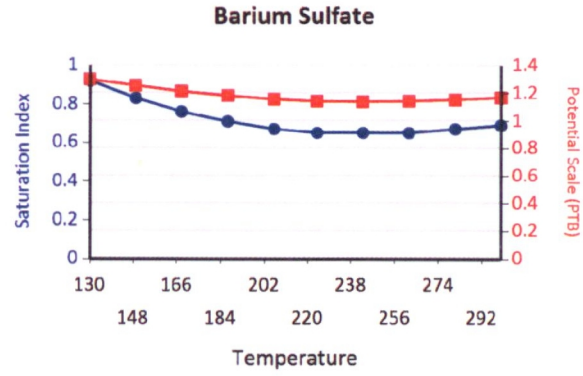
Water Analysis Report

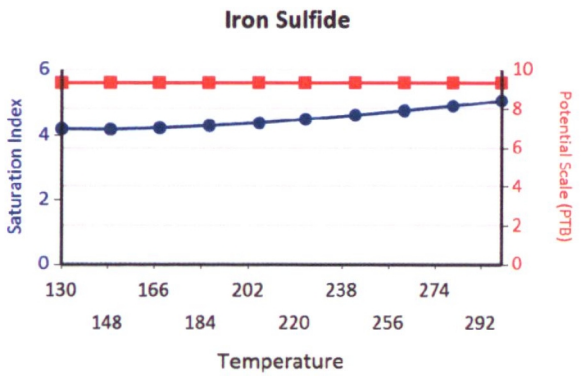
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	2.75	189.40	0.00	0.00	0.00	0.00	0.00	0.00	7.54	28.03
149.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	2.98	193.06	0.00	0.00	0.00	0.00	0.00	0.00	8.13	28.04
168.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	3.23	195.84	0.00	0.00	0.00	0.00	0.00	0.00	8.95	28.04
187.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	3.46	197.56	0.00	0.00	0.00	0.00	0.00	0.00	9.79	28.05
206.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	3.68	198.60	0.00	0.00	0.19	2.02	0.00	0.00	10.65	28.05
224.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	3.88	199.23	0.00	0.00	1.26	12.04	0.00	0.00	11.53	28.05
243.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	4.07	199.62	0.00	0.00	2.32	20.00	0.43	4.19	12.41	28.05
262.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	4.24	199.86	0.00	0.00	3.37	25.59	1.08	9.03	13.30	28.05
281.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	4.41	200.02	0.00	0.00	4.41	28.91	1.73	12.29	14.19	28.05
300.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	4.55	200.11	0.00	0.00	5.44	30.48	2.37	14.23	15.07	28.05

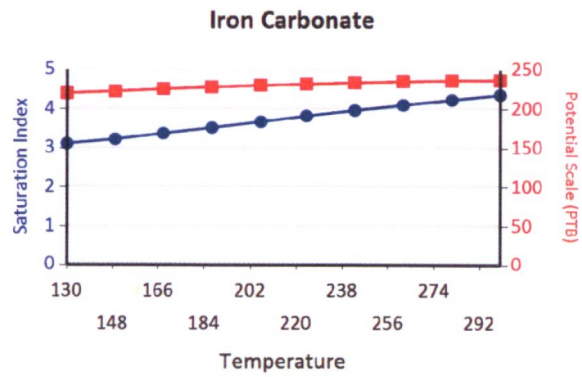
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate









Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

multi-chem®
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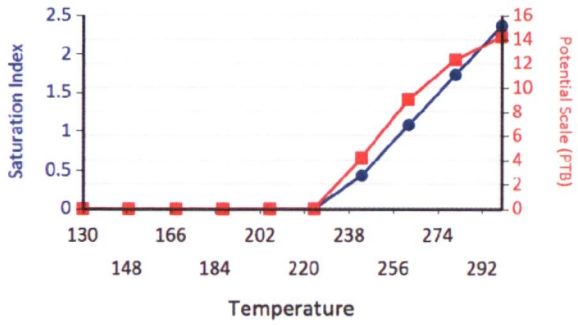
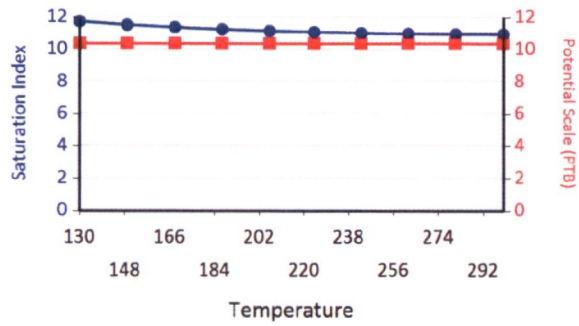
Water Analysis Report

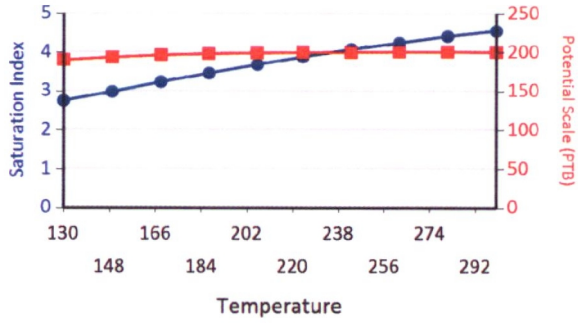
Ca Mg Silicate



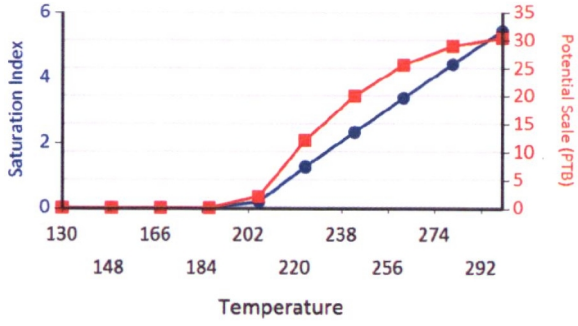
Zinc Sulfide

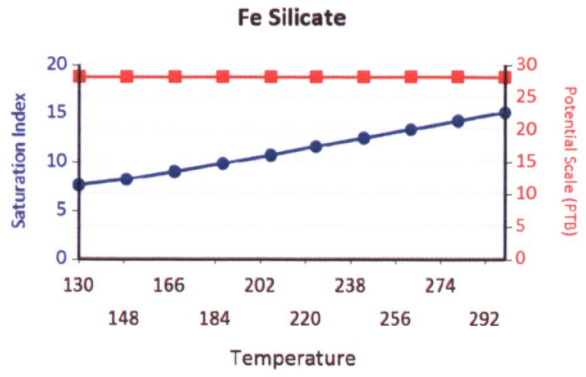


Zinc Carbonate



Mg Silicate




Fe Silicate
Saturation Index
Potential Scale (PTB)
20
15
10
5
0
30
25
20
15
10
5
0
130
166
202
238
274
148
184
220
256
292
Temperature

OMB No. 2040-0042 Approval Expires 11/30/2014

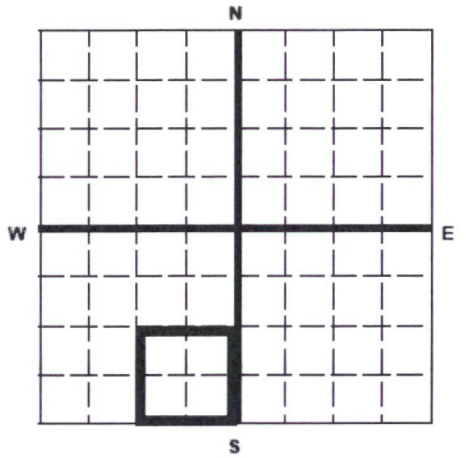
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah, 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State Utah
County Duchesne
Permit Number UT2736-~~04434~~ 04495

Surface Location Description
___ 1/4 of ___ 1/4 of SE 1/4 of SW 1/4 of Section 7 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 559 ft. frm (N/S) S Line of quarter section
and 1947 ft. from (E/W) W Line of quarter section.

U2 Entered
Date 3/1/16
Initial DB

WELL ACTIVITY	TYPE OF PERMIT
☐ Brine Disposal	☐ Individual
☒ Enhanced Recovery	☒ Area
☐ Hydrocarbon Storage	Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 07-14

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING – CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	15	977	977	424		0	0
February	15	1061	1076	528		0	0
March	15	1034	1071	551		0	0
April	15	1019	1035	557		0	0
May	15	1041	1074	575		0	0
June	15	1002	1031	405		0	0
July	15	1031	1114	440		0	0
August	15	967	1035	410		0	0
September	15	1008	1052	459		0	0
October	15	1053	1073	462		0	0
November	15	991	1047	321		0	0
December	15	1033	1092	381		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		02/08/2016

EPA Form 7520-11 (Rev. 12-11)

GREEN BLUE CBI
TAB 2

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 07-14 INJ, DUCHESNE**	Lab Tech:	**Michele Pike**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2016**		
Sample ID:	**WA-327716**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics

Test Date:	1/13/2016
System Temperature 1 (°F):	60
System Pressure 1 (psig):	2000
System Temperature 2 (°F):	180
System Pressure 2 (psig):	50
Calculated Density (g/ml):	1.0030
pH:	6.50
Calculated TDS (mg/L):	8143.05
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	40.00
H_2S in Gas (%):	
H2S in Water (mg/L):	0.00
Tot. SuspendedSolids(mg/L):	
Corrosivity(LanglierSat.Indx)	0.00
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	2677.25	Chloride (Cl):	4000.00
Potassium (K):	2.67	Sulfate (SO_4):	470.00
Magnesium (Mg):	82.93	Bicarbonate (HCO_3):	671.00
Calcium (Ca):	199.10	Carbonate (CO_3):	
Strontium (Sr):	5.30	Acetic Acid (CH_3COO)	
Barium (Ba):	0.37	Propionic Acid (C_2H_5COO)	
Iron (Fe):	3.23	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	2.57	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.46	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.02	Silica (SiO_2):	28.15
Aluminum (Al):	0.08	Calcium Carbonate ($CaCO_3$):	
Lithium (Li):	1.25	Phosphates (PO_4):	2.73
Boron (B):	0.55	Oxygen (O_2):	
Silicon (Si):	13.16		

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	0.34	35.76	0.32	0.12	0.00	0.00	0.63	1.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
167.00	267.00	0.17	18.73	0.34	0.12	0.00	0.00	0.44	1.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	483.00	0.07	7.25	0.37	0.13	0.00	0.00	0.31	1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	700.00	0.00	0.00	0.41	0.13	0.00	0.00	0.18	0.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
127.00	917.00	0.00	0.00	0.46	0.14	0.00	0.00	0.05	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	1133.00	0.00	0.00	0.52	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	1350.00	0.00	0.00	0.60	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
87.00	1567.00	0.00	0.00	0.69	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	1783.00	0.00	0.00	0.80	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.00	2000.00	0.00	0.00	0.92	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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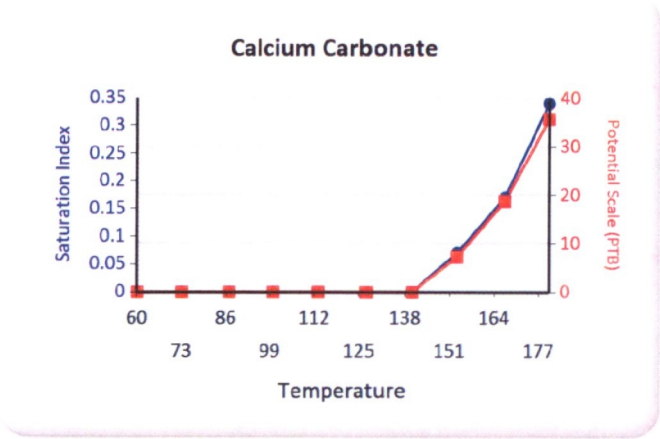
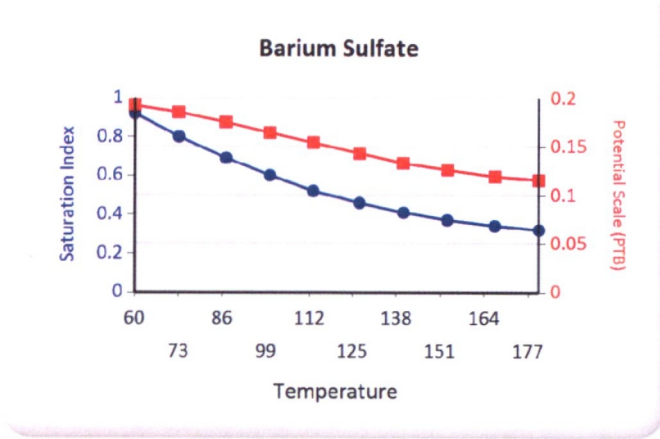
Water Analysis Report

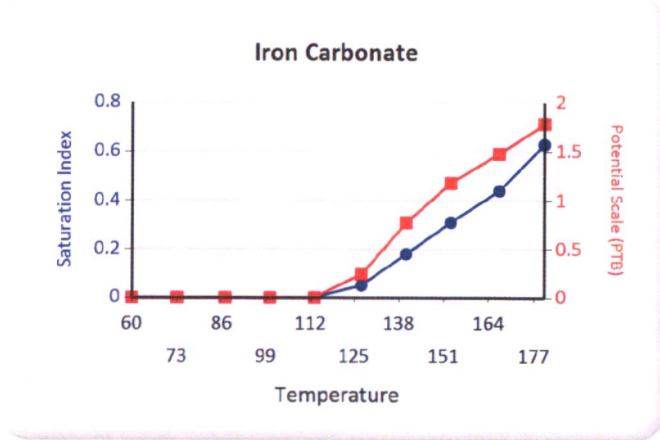
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	1.21	0.00	0.00	0.00	0.00	0.00	0.00	0.90	1.21
167.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
127.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
87.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Barium Sulfate







Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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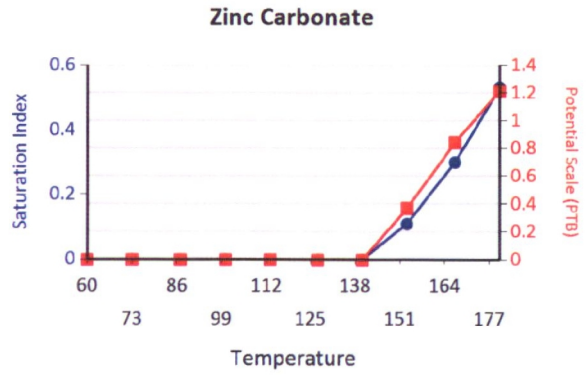
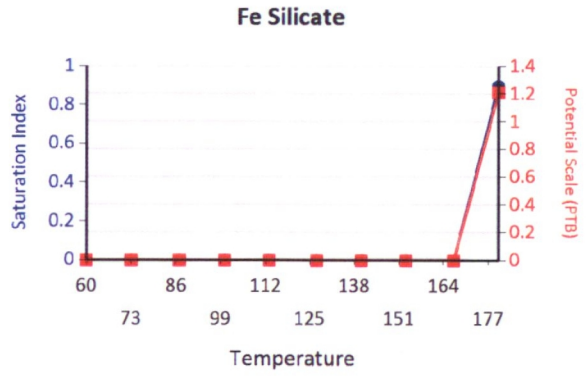
Water Analysis Report





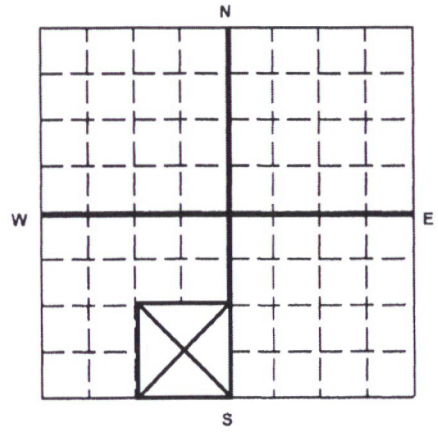
OMB No. 2040-0042 Approval Expires 12/31/2011

United States Environmental Protection Agency
Washington, DC 20460

EPA ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee	Name and Address of Surface Owner
Petroglyph Operating Company, Inc. 2258 P.O. Box 7608 Boise, Idaho 83709	Ute Indian Tribe P.O. Box 70 Ft. Duchesne, Utah 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-04495

Surface Location Description

___ 1/4 of ___ 1/4 of SE 1/4 of SW 1/4 of Section 7 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 559 ft. frm (N/S) S Line of quarter section and 1947 ft. from (E/W) W Line of quarter section.

WELL ACTIVITY	TYPE OF PERMIT
[ ] Brine Disposal	[ ] Individual
[X] Enhanced Recovery	[X] Area
[ ] Hydrocarbon Storage	Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 07-14

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	14	1048	1092	798		0	0
February	14	1079	1098	679		0	0
March	14	1050	1057	759		0	0
April	14	1076	1102	709		0	0
May	14	1087	1087	778		0	0
June	14	1054	1071	687		0	0
July	14	999	1005	643		0	0
August	14	1040	1071	790		0	0
September	14	961	1006	611		0	0
October	14	991	1130	783		0	0
November	14	1065	1080	639		0	0
December	14	1070	1088	617		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possiblility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		2/10/2015

EPA Form 7520-11 (Rev. 12-08)

U2 Entered
Date 3/10/15
Initial GW

TAB	GREEN	BLUE	CBI
		2	

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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Units of Measurement: **Standard**

Water Analysis Report

Production Company: **PETROGLYPH OPERATING CO INC - EBUS**
Well Name: **UTE TRIBAL 07-14 INJ, DUCHESNE**
Sample Point: **WELLHEAD**
Sample Date: **1/7/2015**
Sample ID: **WA-297448**

Sales Rep: **James Patry**
Lab Tech: **Gary Winegar**

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics	
Test Date:	1/14/2015
System Temperature 1 (°F):	160
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	80
System Pressure 2 (psig):	15
Calculated Density (g/ml):	1.0049
pH:	8.10
Calculated TDS (mg/L):	11454.00
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	5.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	3437.86	Chloride (Cl):	6000.00
Potassium (K):	62.45	Sulfate (SO_4):	227.00
Magnesium (Mg):	26.62	Bicarbonate (HCO_3):	1586.00
Calcium (Ca):	52.38	Carbonate (CO_3):	
Strontium (Sr):	5.79	Acetic Acid (CH_3COO)	
Barium (Ba):	14.57	Propionic Acid (C_2H_5COO)	
Iron (Fe):	7.14	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	3.97	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.00	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.11	Silica (SiO_2):	30.11

Notes:
B=6.07 Al=.06 Li=2.02

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	1.20	36.28	2.13	8.61	3.45	3.93	2.20	5.15	0.00	0.00	0.00	0.00	0.00	0.00	11.30	2.08
88.00	157.00	1.19	35.37	2.05	8.60	3.35	3.93	2.21	5.16	0.00	0.00	0.00	0.00	0.00	0.00	11.10	2.08
97.00	300.00	1.21	35.90	1.97	8.58	3.29	3.92	2.26	5.16	0.00	0.00	0.00	0.00	0.00	0.00	10.94	2.08
106.00	443.00	1.23	36.46	1.90	8.57	3.24	3.92	2.31	5.16	0.00	0.00	0.00	0.00	0.00	0.00	10.79	2.08
115.00	585.00	1.25	37.03	1.84	8.55	3.20	3.92	2.35	5.17	0.00	0.00	0.00	0.00	0.00	0.00	10.65	2.08
124.00	728.00	1.27	37.61	1.78	8.53	3.17	3.92	2.40	5.17	0.00	0.00	0.00	0.00	0.00	0.00	10.52	2.08
133.00	871.00	1.30	38.19	1.72	8.51	3.15	3.92	2.45	5.17	0.00	0.00	0.00	0.00	0.00	0.00	10.39	2.08
142.00	1014.00	1.33	38.77	1.68	8.49	3.13	3.92	2.49	5.17	0.00	0.00	0.00	0.00	0.00	0.00	10.28	2.08
151.00	1157.00	1.36	39.34	1.63	8.47	3.11	3.92	2.54	5.17	0.00	0.00	0.00	0.00	0.00	0.00	10.17	2.08
160.00	1300.00	1.39	39.89	1.59	8.45	3.11	3.92	2.58	5.18	0.00	0.00	0.00	0.00	0.00	0.00	10.07	2.08

		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	1.21	2.49	0.00	0.00	0.14	0.97	0.00	0.00	7.10	5.51
88.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	1.30	2.52	0.00	0.00	0.31	1.87	0.00	0.00	7.11	5.50
97.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	1.42	2.56	0.00	0.00	0.71	4.07	0.00	0.00	7.34	5.51
106.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54	2.59	0.00	0.00	1.11	6.34	0.21	1.51	7.58	5.52
115.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	1.65	2.60	0.00	0.00	1.51	8.71	0.44	2.88	7.84	5.53
124.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	1.76	2.62	0.00	0.00	1.92	11.16	0.66	4.30	8.10	5.53
133.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	1.87	2.63	0.00	0.00	2.34	13.70	0.89	5.74	8.37	5.54
142.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	1.97	2.64	0.00	0.00	2.75	16.29	1.13	7.20	8.65	5.54
151.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	2.07	2.65	0.00	0.00	3.17	18.91	1.36	8.65	8.93	5.54
160.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	2.16	2.65	0.00	0.00	3.59	21.51	1.60	10.07	9.22	5.54

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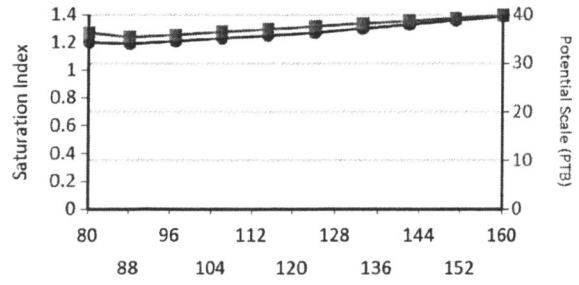
Water Analysis Report

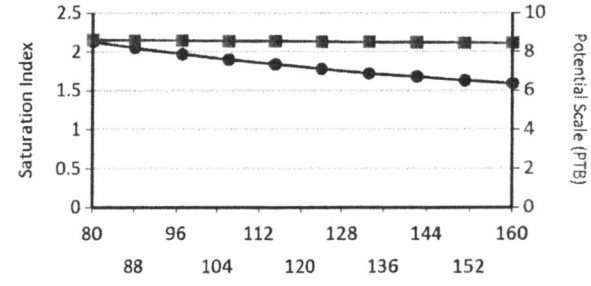
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Mg Silicate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

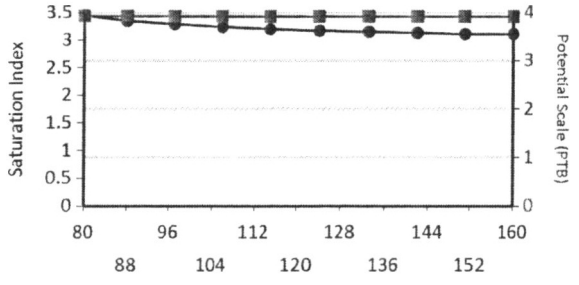
Calcium Carbonate



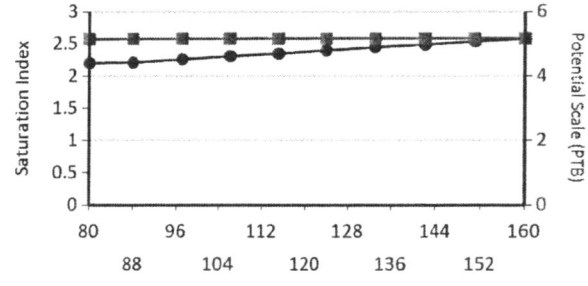
Barium Sulfate



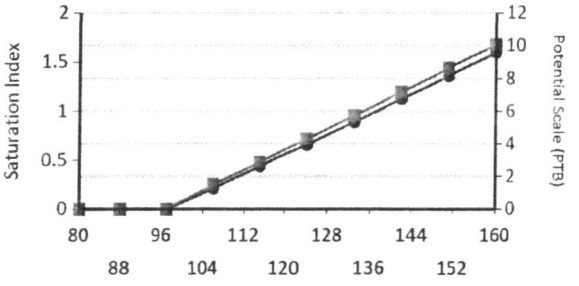
Iron Sulfide



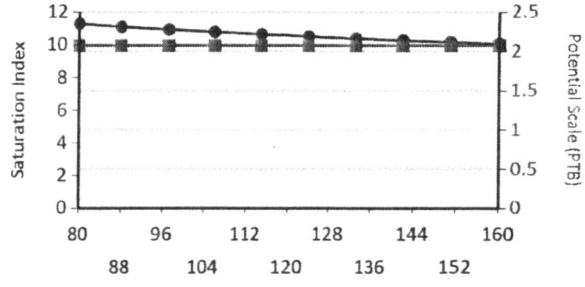
Iron Carbonate



Ca Mg Silicate



Zinc Sulfide



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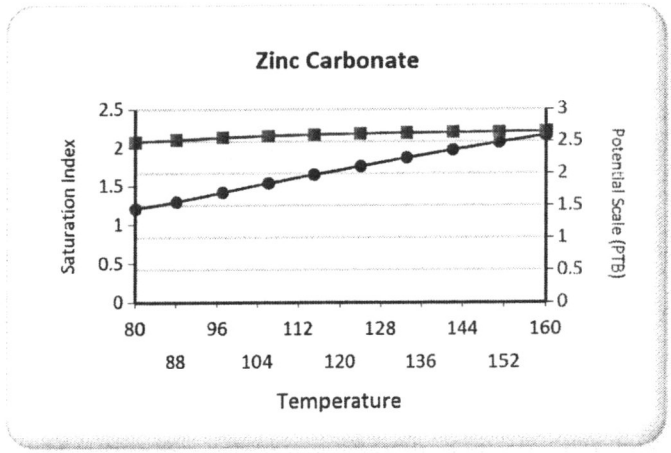
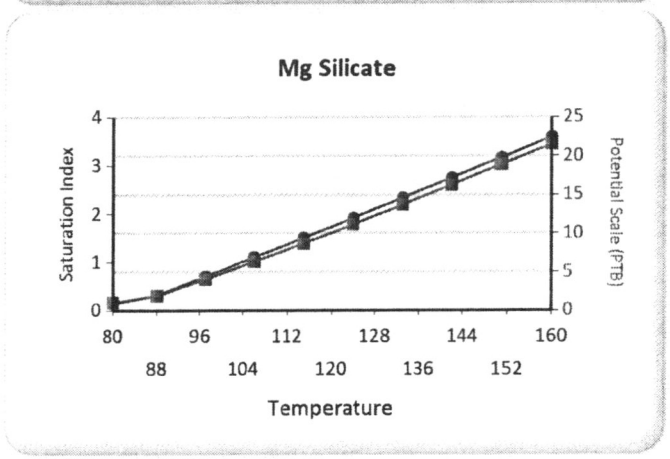
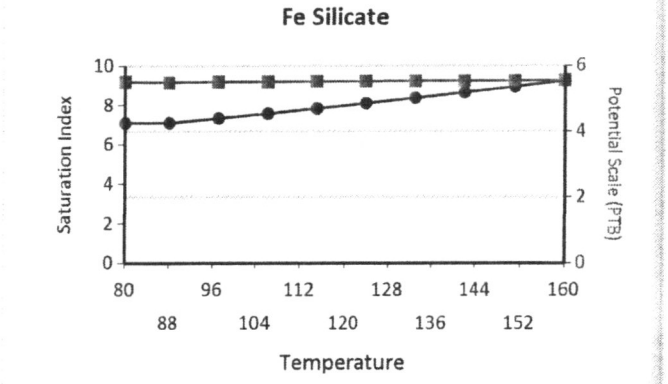
Water Analysis Report







December 29, 2015

Gary Wang
Mail Code: 8ENF-UFO
US EPA Region 8
1595 Wyncoop Street
Denver, CO 80202-1129

RE: EPA AREA PERMIT NO. UT2736-04495
Mechanical Integrity Test
Standard Five year retesting for Ute Tribal 07-14

Mr. Breffle:
The enclose Mechanical Integrity Test was performed on the above referenced well on December 23, 2015. This MIT was performed because the well was due for the regular five year Mechanical Integrity Test.

If you need any more information please call at (435) 722-5302.

Sincerely,
Petroglyph Operating Co., Inc.

Rodrigo Jurado
Regulatory Compliance Specialist

Encl: MIT for the Ute Tribal 07-14

	2		TAB
CBI	BLUE	GREEN	

U2 Entered
Date 2/2/16
Initial DH

Mechanical Integrity Test
Tubing/Casing Annulus Pressure Test

U.S. Environmental Protection Agency
Underground Injection Control Program
1595 Wynkoop Street, Denver, CO 80202

EPA Witness: _____ Date: 12 / 27 / 15
Test conducted by: CHAD STEVENSON
Others present: _____

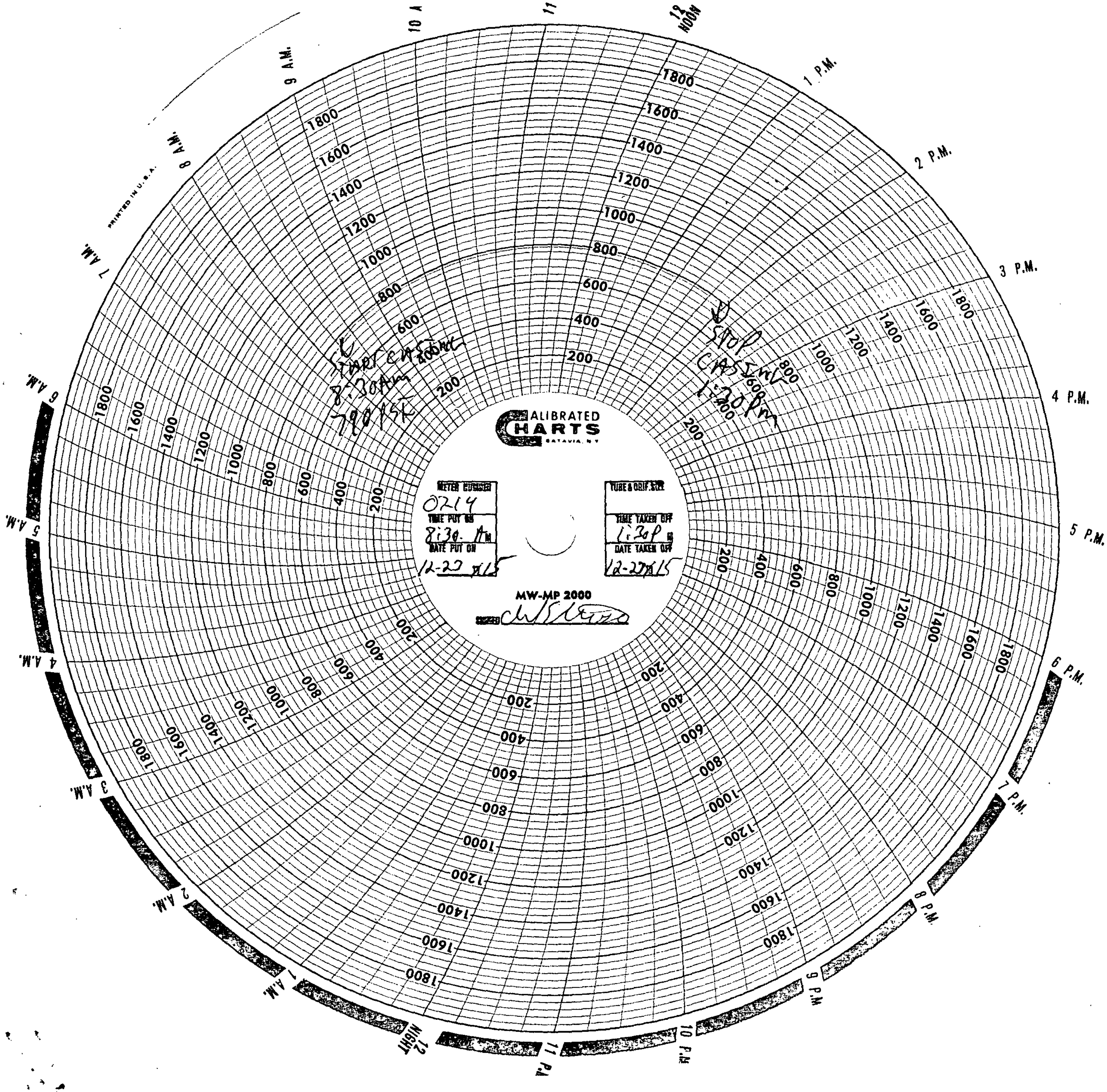
Well Name: 07-14 Type: ER SWD **Status:** AC TA UC
Field: ANTELOPE CREEK
Location: 07-14 Sec: ___ T ___ N / S R ___ E / W County: DUCHESNE State: UT
Operator: PETROGLYPH ENERGY
Last MIT: / / **Maximum Allowable Pressure:** _____ **PSIG**

Regularly scheduled test? [X] Yes [ ] No
Initial test for permit? [ ] Yes [ ] No
Test after well rework? [ ] Yes [ ] No

Well injecting during test? If Yes, rate: 16 **bpd**
Pre-test annulus pressure: _____ **psig**

MIT DATA TABLE	Test #1	Test #2	Test #3
TUBING PRESSURE RECORD			
Initial Pressure	1096 psig	psig	psig
End of test pressure	1096 psig	psig	psig
CASING / TUBING ANNULUS PRESSURE RECORD			
0 minutes	790 psig	psig	psig
5 minutes	790 psig	psig	psig
10 minutes	790 psig	psig	psig
15 minutes	790 psig	psig	psig
20 minutes	791 psig	psig	psig
25 minutes	790 psig	psig	psig
30 minutes	790 psig	psig	psig
4 HOURS minutes	790 psig	psig	psig
_____ minutes	psig	psig	psig
RESULT	[ ] Pass [ ] Fail	[ ] Pass [ ] Fail	[ ] Pass [ ] Fail

Does the annulus pressure build back up after the test ? If Yes, _____ psig.


CALIBRATED CHARTS
BATAVIA, N.Y.
METER NUMBER
0214
TIME PUT ON
8:30 AM
DATE PUT ON
12-22 15
TUBE & ORIF. SIZE
TIME TAKEN OFF
1:30P M
DATE TAKEN OFF
12-22 15
MW-MP 2000
SIGNED
PRINTED IN U.S.A.
12 NOON
1 P.M.
2 P.M.
3 P.M.
4 P.M.
5 P.M.
6 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.
12 NIGHT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
5 A.M.
6 A.M.
7 A.M.
8 A.M.
9 A.M.
10 A
11

OMB No. 2040-0042 Approval Expires 12/31/2011

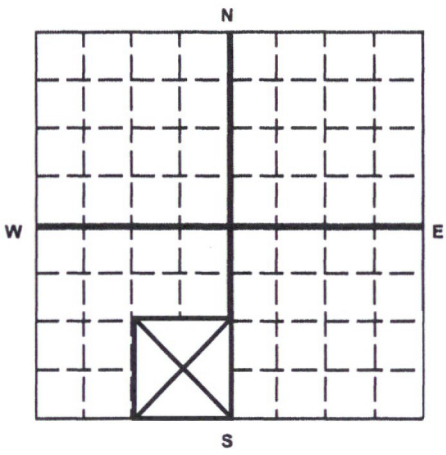
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-04495

Surface Location Description
___ 1/4 of ___ 1/4 of SE 1/4 of SW 1/4 of Section 7 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 559 ft. frm (N/S) S Line of quarter section
and 1947 ft. from (E/W) W Line of quarter section.

WELL ACTIVITY
- ☐ Brine Disposal
- ☒ Enhanced Recovery
- ☐ Hydrocarbon Storage

TYPE OF PERMIT
- ☐ Individual
- ☒ Area

Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 07-14

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	13	1036	1062	605		0	0
February	13	990	1031	478		0	0
March	13	950	1032	422		0	0
April	13	1086	1089	750		0	0
May	13	1064	1095	574		0	0
June	13	947	1068	491		0	0
July	13	1055	1095	780		0	0
August	13	1069	1083	818		0	0
September	13	1069	1077	786		0	0
October	13	1084	1101	821		0	0
November	13	1059	1070	591		0	0
December	13	1040	1075	623		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		2/11/2014

EPA Form 7520-11 (Rev. 12-08)

TAB 2

UZ Entered
Date 3/18/14
Initial JS

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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Units of Measurement: **Standard**

Water Analysis Report

Production Company: **PETROGLYPH ENERGY INC**
Well Name: **UTE TRIBAL 07-14 INJ**
Sample Point: **Wellhead**
Sample Date: **1/8/2014**
Sample ID: **WA-262958**

Sales Rep: **James Patry**
Lab Tech: **Gary Winegar**

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics	
Test Date:	1/15/2014
System Temperature 1 (°F):	180
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	60
System Pressure 2 (psig):	15
Calculated Density (g/ml):	1.003
pH:	8.50
Calculated TDS (mg/L):	8395.45
CO2 in Gas (%):	
Dissolved CO2 (mg/L)):	0.00
H2S in Gas (%):	
H2S in Water (mg/L):	0.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	2901.53	Chloride (Cl):	4000.00
Potassium (K):	58.00	Sulfate (SO_4):	259.00
Magnesium (Mg):	38.00	Bicarbonate (HCO_3):	1024.80
Calcium (Ca):	77.00	Carbonate (CO_3):	
Strontium (Sr):	4.70	Acetic Acid (CH_3COO)	
Barium (Ba):	3.30	Propionic Acid (C_2H_5COO)	
Iron (Fe):	4.95	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.29	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.12	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.23	Silica (SiO_2):	23.54

Notes:
B=3.6 Al=.03 Li=.8

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum $CaSO_4 \cdot 2H_2O$		Celestite $SrSO_4$		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	1.52	44.39	1.84	1.94	0.00	0.00	2.06	3.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	157.00	1.53	43.84	1.70	1.92	0.00	0.00	2.12	3.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86.00	300.00	1.55	45.08	1.57	1.91	0.00	0.00	2.19	3.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	443.00	1.57	46.46	1.46	1.90	0.00	0.00	2.26	3.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	585.00	1.60	47.96	1.36	1.88	0.00	0.00	2.33	3.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
126.00	728.00	1.63	49.56	1.27	1.86	0.00	0.00	2.39	3.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	871.00	1.67	51.23	1.20	1.84	0.00	0.00	2.46	3.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	1014.00	1.71	52.92	1.14	1.82	0.00	0.00	2.52	3.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
166.00	1157.00	1.75	54.59	1.09	1.81	0.00	0.00	2.58	3.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.00	1300.00	1.79	56.23	1.05	1.79	0.00	0.00	2.63	3.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Vernal, UT 84078

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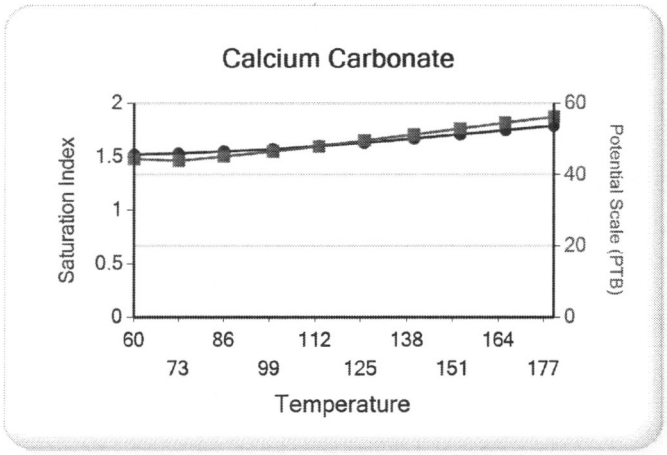
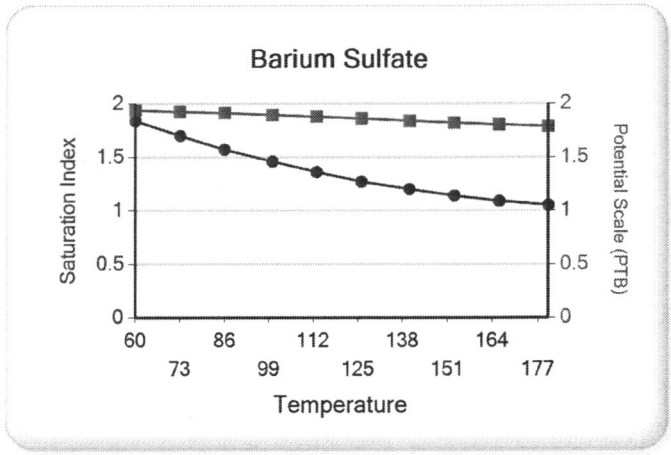
Water Analysis Report

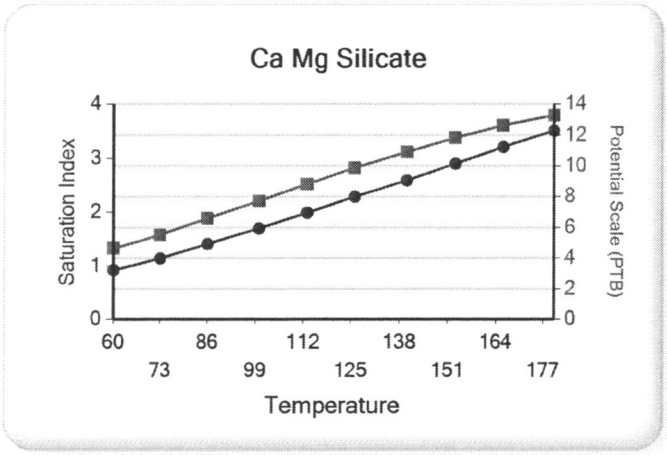
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.88	8.77	0.92	4.64	8.11	3.84
73.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.07	0.00	0.00	2.35	10.36	1.14	5.52	8.31	3.84
86.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.11	0.00	0.00	2.88	12.37	1.41	6.62	8.59	3.84
100.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56	0.14	0.00	0.00	3.41	14.44	1.70	7.73	8.89	3.84
113.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.16	0.00	0.00	3.96	16.59	1.99	8.82	9.21	3.85
126.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	0.89	0.17	0.00	0.00	4.52	18.82	2.29	9.89	9.55	3.85
140.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	1.04	0.18	0.00	0.00	5.07	21.08	2.59	10.90	9.90	3.85
153.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	1.17	0.18	0.00	0.00	5.63	23.27	2.90	11.83	10.25	3.85
166.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	1.30	0.19	0.00	0.00	6.17	25.19	3.21	12.63	10.62	3.85
180.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	1.42	0.19	0.00	0.00	6.72	26.66	3.51	13.29	10.98	3.85

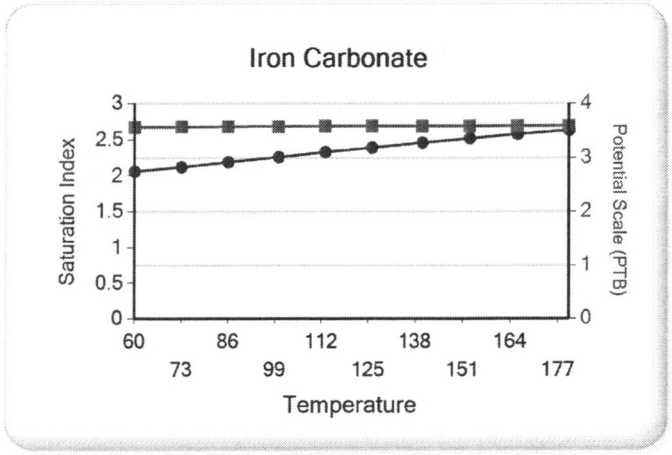
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate









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Vernal, UT 84078

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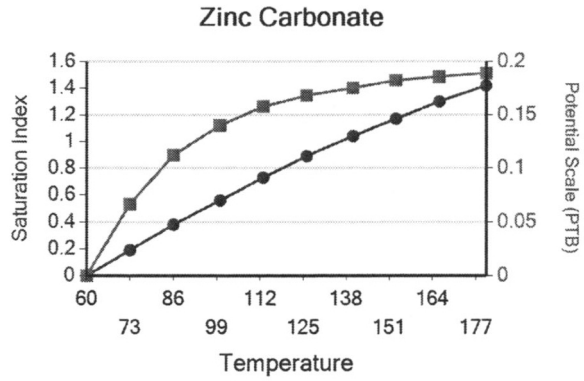
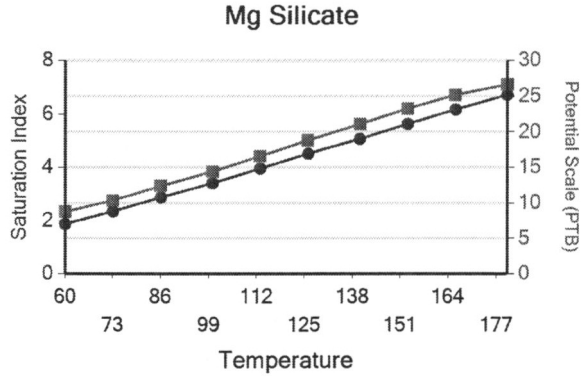
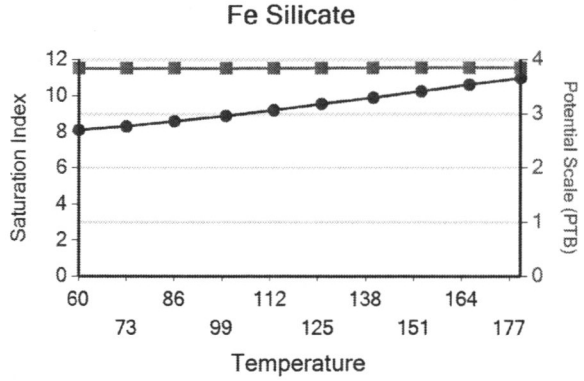
Water Analysis Report







UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466

OCT 25 2000

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Micheal Safford
Operations Coordinator
Petroglyph Operating Company, Inc.
P.O. Box 607
Roosevelt, UT 84066

RE: **Additional Well to Area Permit**
Antelope Creek Waterflood
EPA Area Permit No. UT2736-00000
Duchesne County, Utah

Dear Mr. Safford:

Your letter of May 2, 2000, requested that the following production well be converted to a Class II enhanced oil recovery well and added to the Antelope Creek Waterflood. As authorized under EPA Area Permit No. UT2736-00000, your request is hereby granted.

NAME	LOCATION	EPA WELL PERMIT NO.
Ute Tribal #07-14	SE SW Section 7 T 5 S - R 3 W Duchesne County, UT	UT2736-04495

This additional well is within the boundary of the existing Area Permit for the Antelope Creek Waterflood (UT2736-00000), and this addition is made under the provisions of 40 CFR §144.33 and the terms and conditions of the original Permit. The proposed well location, well schematic, conversion procedures with/schematic, Cement Bond Log (CBL), and Financial Responsibility Demonstration, submitted by your office, have been reviewed and approved as follows:

(1) The **revised conversion** plan with schematic for this production well has been reviewed, and found satisfactory. EPA analysis of the CBL for this well **could not determine that the annulus cement in the Ute Tribal #07-14** would provide an effective barrier to significant upward movement of fluids through vertical channels to the wellbore; (Part II MI) pursuant to

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466

OCT 25 2000

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Micheal Safford
Operations Coordinator
Petroglyph Operating Company, Inc.
P.O. Box 607
Roosevelt, UT 84066

Scan under
UT20736-04495
Add Well to Area
Permit 10/25/2000

RE: Additio
Antelop
EPA Are
Duchesn

Dear Mr. Safford:

Your letter of May 2, 2000, requested that the following production well be converted to a Class II enhanced oil recovery well and added to the Antelope Creek Waterflood. As authorized under EPA Area Permit No. UT2736-00000, your request is hereby granted.

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40 CFR § 146.8 (a)(2). For your review in selecting which "external" mechanical integrity test to conduct on the Ute Tribal #07-14, please refer to the enclosed **GROUND WATER SECTION GUIDANCE NO. 37: Demonstrating Part II (External)** mechanical for a Class II injection well Permit.

Please call Mr. Dan Jackson, of my staff, for consultation in your selection of **Part II "external" mechanical integrity**, and the possibility of receiving authorization to inject for a limited period for the purpose of stabilizing the injection zone prior to initiating an "external" mechanical integrity investigation. The limited period would not exceed 180 days.

(2) **Maximum injection pressure (MIP)** - please reference the Final Area Permit UT2736-00000, Part II. Section C.5.(b) "the maximum surface injection pressure (MIP) shall not exceed **1900 psig". Until such time that a step-rate injectivity test (SRT) has been performed and approved by the EPA, the initial maximum surface injection pressure (MIP) for the Ute Tribal #07-14 shall not exceed 1900 psig.**

Final Area Permit (UT2736-00000), has provisions whereby the permittee may request an increase, or decrease, in the maximum surface injection pressure.

(3) The **plugging and abandonment plan and schematic,** submitted by your office, has been reviewed, and approved.

(4) **Financial Responsibility Demonstration:** the applicant has chosen to demonstrate financial responsibility for the Ute Tribal #07-14 through a Surety Performance Bond #1936, in the amount of $15,000 per well, and Bond Rider No.1, that has been reviewed and approved by the EPA.

Underground Sources of Drinking Water (USDWs). The base of the USDWs in the Ute Tribal #07-14 is approximately 1,137 feet below ground level and is located within the Uinta Formation. The source for this USDW information is formation water analyses submitted by the operator for twenty-two (22) wells within the initial AOR, and from Publication No. 92 (1987), prepared jointly by the USGS and the Utah of Oil, Gas, and Mining.

Injection Interval: Fluid injection shall be limited to the gross zones within the Green River Formation between the approximate depths of 3,939 feet (Top of "B" Marker) and 5,926 feet (Basal Carbonate). The injection (perforated) zones from 4,103 feet to 5,675 feet within this portion of the Green River Formation, are comprised of porous and permeable lenticular calcareous sandstones interbedded with low permeability carbonates and calcareous shales. The lenticular sandstones vary in thickness from 1 to 30 feet and are individually separated by shale which act as isolation barriers (confining zones) for the waterflood.

Confining Zone: The overall confining zone above the top injection interval, is identified in this well from 3,939' to 3,814', and is overlain by impermeable Upper Green River Formation calcareous sandy lacustrine shales and continuous beds of microcrystalline dolomite.

Prior to commencing injection into this well, permittee must fulfill Permit condition PART II, C. 2. and have submitted to the EPA for review and approval, the following:

(1) All conversion is complete and the permittee has submitted a completed **Well Rework Record (EPA Form 7520-12);** and

(2) The **pore pressure has been determined; and**

(3) The well has successfully completed and passed **Part I (internal) of the mechanical integrity test (MIT) with pressure chart and Part II (external) mechanical integrity. An EPA form is enclosed along with current MIT guidance.**

Please be aware that Petroglyph does not have authorization to begin injection into the Ute Tribal #07-14 until the items listed above have been approved by the EPA and Petroglyph has received written authorization to begin injection from the EPA.

All other provisions and conditions of the Permit remain as originally issued July 12, 1994, and revised April 30, 1998.

If you have any questions, please contact Mr. Dan Jackson at 303.312.6155. Also, please direct the above requirements to the Ground Water Program Director at the above letterhead address, citing **MAIL CODE 8P-W-GW.** Thank you for your continued cooperation.

Sincerely,

Kerrigan G. Clough
Assistant Regional Administrator
Office of Partnerships and
Regulatory Assistance

Enclosure: Mechnical Integrity Test Form (MIT)
Current MIT Guidance No. 37

cc: Mr. Roland McCook, Chairman
Uintah & Ouray Business Committee

Ms. Elaine Willie, Environmental Director
Ute Indian Tribe

Norman Cambridge
BIA - Uintah & Ouray Agency

Mr. Jerry Kenczka
BLM - Vernal District Office

Mr. Gilbert Hunt
State of Utah Natural Resources
Division of Oil, Gas & Mining

Is your RETURN ADDRESS completed on the reverse side?

SENDER: 10/26/00 CW 3847C

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "*Return Receipt Requested*" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

OCT 26 2000

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Mr. Micheal Safford
Operations Coordinator
Petroglyph Operating Co., Inc.
P.O. BOX 607
Roosevelt, UT 84066

4a. Article Number
Z 159 952 226

4b. Service Type
☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery
10-30-00

5. Received By: *(Print Name)*

6. Signature: *(Addressee or Agent)*
X

8. Addressee's Address *(Only if requested and fee is paid)*
NOV 8 2000

Thank you for using Return Receipt Service.

PS Form **3811**, December 1994 102595-97-B-0179 Domestic Return Receipt

Z 159 952 226

US Postal Service 10/26/00 CW 3847C

Receipt for Certified Mail

No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to Mr. Micheal Safford Operations Coordinator Petroglyph Operating Co., Inc.	
Street & Number P.O. BOX 607	
Post Office, State, & ZIP Code Roosevelt, UT 84066	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form **3800**, April 1995

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

OCT 25 2000

Mr. Micheal Safford
Operations Coordinator
Petroglyph Operating Company, Inc.
P.O. Box 607
Roosevelt, UT 84066

RE: **Additional Well to Area Permit**
Antelope Creek Waterflood
EPA Area Permit No. UT2736-00000
Duchesne County, Utah

Dear Mr. Safford:

Your letter of May 2, 2000, requested that the following production well be converted to a Class II enhanced oil recovery well and added to the Antelope Creek Waterflood. As authorized under EPA Area Permit No. UT2736-00000, your request is hereby granted.

NAME	LOCATION	EPA WELL PERMIT NO.
Ute Tribal #07-14	**SE SW Section 7** **T 5 S - R 3 W** **Duchesne County, UT**	**UT2736-04495**

This additional well is within the boundary of the existing Area Permit for the Antelope Creek Waterflood (UT2736-00000), and this addition is made under the provisions of 40 CFR §144.33 and the terms and conditions of the original Permit. The proposed well location, well schematic, conversion procedures with/schematic, Cement Bond Log (CBL), and Financial Responsibility Demonstration, submitted by your office, have been reviewed and approved as follows:

Concur

(1) The **revised conversion** plan with schematic for this production well has been reviewed, and found satisfactory. EPA analysis of the CBL for this well **could not determine that the annulus cement in the Ute Tribal #07-14** would provide an effective barrier to significant upward movement of fluids through vertical channels to the wellbore; (Part II MI) pursuant to

CEW 9/27/00 8P-W-GW Duryee 10/24/00 Boyed 10/26/00 8P-W-GW 10/25/00 LG Mailed 10/26/00 LG 10/25/00 8PWGW Tinker 8P-W 10/25/00

40 CFR § 146.8 (a)(2). For your review in selecting which "external" mechanical integrity test to conduct on the Ute Tribal #07-14, please refer to the enclosed **GROUND WATER SECTION GUIDANCE NO. 37: Demonstrating Part II (External)** mechanical for a Class II injection well Permit.

Please call Mr. Dan Jackson, of my staff, for consultation in your selection of **Part II "external" mechanical integrity**, and the possibility of receiving authorization to inject for a limited period for the purpose of stabilizing the injection zone prior to initiating an "external" mechanical integrity investigation. The limited period would not exceed 180 days.

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Final Area Permit (UT2736-00000), has provisions whereby the permittee may request an increase, or decrease, in the maximum surface injection pressure.

(3) The **plugging and abandonment plan and schematic,** submitted by your office, has been reviewed, and approved.

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Confining Zone: The overall confining zone above the top injection interval, is identified in this well from 3,939' to 3,814', and is overlain by impermeable Upper Green River Formation calcareous sandy lacustrine shales and continuous beds of microcrystalline dolomite.

Prior to commencing injection into this well, permittee must fulfill Permit condition PART II, C. 2. and have submitted to the EPA for review and approval, the following:

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(2) The **pore pressure has been determined; and**

(3) The well has successfully completed and passed **Part I (internal) of the mechanical integrity test (MIT) with pressure chart and Part II (external) mechanical integrity. An EPA form is enclosed along with current MIT guidance.**

Please be aware that Petroglyph does not have authorization to begin injection into the Ute Tribal #07-14 until the items listed above have been approved by the EPA and Petroglyph has received written authorization to begin injection from the EPA.

All other provisions and conditions of the Permit remain as originally issued July 12, 1994, and revised April 30, 1998.

If you have any questions, please contact Mr. Dan Jackson at 303.312.6155. Also, please direct the above requirements to the Ground Water Program Director at the above letterhead address, citing **MAIL CODE 8P-W-GW.** Thank you for your continued cooperation.

Sincerely,

Kerrigan G. Clough
Assistant Regional Administrator
Office of Partnerships and
Regulatory Assistance

Enclosure: Mechnical Integrity Test Form (MIT)
Current MIT Guidance No. 37

cc: Mr. Roland McCook, Chairman
Uintah & Ouray Business Committee

Ms. Elaine Willie, Environmental Director
Ute Indian Tribe

Norman Cambridge
BIA - Uintah & Ouray Agency

Mr. Jerry Kenczka
BLM - Vernal District Office

Mr. Gilbert Hunt
State of Utah Natural Resources
Division of Oil, Gas & Mining

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466
http://www.epa.gov/region08

AUG 30 2001

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Micheal Safford
Operations Coordinator
Petroglyph Operating Company, Inc.
P.O. Box 607
Roosevelt, UT 84066

RE: **Authorization to Continue Injection**
Ute Tribal #07-14
EPA Area Permit No. UT2736-00000
EPA Well Permit No. UT04495
Duchesne County, Utah

Dear Mr. Safford:

Thank you for submitting to the Region VIII Ground Water Program office of the Environmental Protection Agency (EPA) the results from the July 30, 2001, radioactive tracer survey (RATS) used to demonstrate Part II (External) Mechanical Integrity (MI) test on the Ute Tribal #07-14 injection well. In the letter accompanying the RATS results, you requested an extension on the time allowed to inject in order to allow for continued stabilization of pressure, and indicated your willingness to run RATS at set intervals until a maximum injection pressure of 1900 psig could be obtained, tested and approved. A limited injection period of up to one hundred and eighty days, beginning March 5, 2001, was authorized to allow for stabilization of the injection formation pressure prior to the demonstration of Part II (External) MI.

The results of the RATS have been reviewed and the EPA has determined that the test adequately demonstrated Part II MI, that injected fluids will remain in the authorized injection interval, **at the tested pressure of 1140 psi.** Therefore, EPA hereby approves this demonstration of Part II (External) MI and authorizes continued injection into the Ute Tribal #07-14 under the terms and conditions of EPA Area Permit UT2736-00000 and the

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466
http://www.epa.gov/region08

AUG 30 2001

Scan under
UT30736-04495
Authorization to
Inject - Final
8/30/2001

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Micheal Safford
Operations Coordinator
Petroglyph Operating Company, Inc.
P.O. Box 607
Roosevelt, UT 84066

RE: **Authorization to Continue Injection**
Ute Tribal #07-14
EPA Area Permit No. UT2736-00000
EPA Well Permit No. UT04495
Duchesne County, Utah

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Authorization for Additional Well UT2736-04495 issued under this Area Permit. The maximum allowable injection pressure (MAIP) for this well is 1140 psi.

Please note that the maximum pressure used during a RATS MI demonstration becomes the maximum allowable injection pressure for the well. However, you may apply for a higher maximum allowable injection pressure at a later date after the formation pressure has further stabilized. Your application should be accompanied by the interpreted results from a step rate test (SRT) that measures the formation fracture pressure and fracture gradient at this location. A copy of EPA guidelines for running and interpreting a step rate test are included with this letter. Should the step rate test result in approval of a higher MAIP, a new Part II (External MI) demonstration must be run. Please note that to use a pressure greater than the present MAIP of 1140 psi during a step rate test and RATS, you must first receive prior written authorization from the Director.

If you have any questions in regard to the above action, please contact Chuck Tinsley at 303.312.6266 or Dan Jackson at 303.312.6155. Results from temperature log or other Part II MI test should be mailed directly to the Ground Water Program Director, Mail Code 8P-W-GW.

Sincerely,

D. Edwin Hogle
Director
Ground Water Program

enclosure: Step-Rate Test Procedure

cc: Mr. D. Floyd Wopsock, Chairman
Uintah & Ouray Business Council
Ute Indian Tribe

Ms. Elaine Willie
Environmental Director
Ute Indian Tribe

Mr. Gil Hunt
State of Utah Natural Resources
Division of Oil, Gas, and Mining

Mr. Jerry Kenczka
Bureau of Land management
Vernal District Office

Mr. Nathan Wiser, ENF-T
USEPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466
http://www.epa.gov/region08

AUG 30 2001 CONCURRENCE COPY

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Micheal Safford
Operations Coordinator
Petroglyph Operating Company, Inc.
P.O. Box 607
Roosevelt, UT 84066

RE: **Authorization to Continue Injection**
Ute Tribal #07-14
EPA Area Permit No. UT2736-00000
EPA Well Permit No. UT04495
Duchesne County, Utah

Dear Mr. Safford:

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Concur

The results of the RATS have been reviewed and the EPA has determined that the test adequately demonstrated Part II MI, that injected fluids will remain in the authorized injection interval, **at the tested pressure of 1140 psi.** Therefore, EPA hereby approves this demonstration of Part II (External) MI and authorizes continued injection into the Ute Tribal #07-14 under the terms and conditions of EPA Area Permit UT2736-00000 and the

8/28/01

8P-W-GW 8/29/01

8P-W-GW 8/29/01 mailed 8/30/01

8/29/01

Authorization for Additional Well UT2736-04495 issued under this Area Permit. The maximum allowable injection pressure (MAIP) for this well is 1140 psi.

Please note that the maximum pressure used during a RATS MI demonstration becomes the maximum allowable injection pressure for the well. However, you may apply for a higher maximum allowable injection pressure at a later date after the formation pressure has further stabilized. Your application should be accompanied by the interpreted results from a step rate test (SRT) that measures the formation fracture pressure and fracture gradient at this location. A copy of EPA guidelines for running and interpreting a step rate test are included with this letter. Should the step rate test result in approval of a higher MAIP, a new Part II (External MI) demonstration must be run. Please note that to use a pressure greater than the present MAIP of 1140 psi during a step rate test and RATS, you must first receive prior written authorization from the Director.

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Sincerely,

D. Edwin Hogle
Director
Ground Water Program

enclosure: Step-Rate Test Procedure

cc: Mr. D. Floyd Wopsock, Chairman
Uintah & Ouray Business Council
Ute Indian Tribe

Ms. Elaine Willie
Environmental Director
Ute Indian Tribe

Mr. Gil Hunt
State of Utah Natural Resources
Division of Oil, Gas, and Mining

Mr. Jerry Kenczka
Bureau of Land management
Vernal District Office

Mr. Nathan Wiser, ENF-T
USEPA

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to: 8/30/01 CW 4156C – 4158C

Mr. Micheal Safford
Operations Coordinator
Petroglyph Operating Co., Inc.
P.O. Box 607
Roosevelt, UT 84066

AUG 30 2001

(UT04636)
UTE TRIBAL #04-13

COMPLETE THIS SECTION ON DELIVERY

A. Received by (Please Print Clearly) | B. Date of Delivery: 9-4-01

C. Signature
X [signature] ☐ Agent ☐ Addressee

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

rec'd 26
SEP 10 2001

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Copy from service label) 7001 0320 0005 9387 1833

PS Form 3811, July 1999 D Domestic Return Receipt 102595-00-M-0952

8/30/01 TO MICHEAL SAFFORD
PETROGLYPH OPERATING COMPANY, INC.
Certified mailed together: #156C, 4157C & 4158C
Original green card:
1. UTE TRIBAL #04-13 (UT2736-04636)
(#4156C)
2. UTE TRIBAL #07-14 (UT2736-04495)
(#4157C)
3. UTE TRIBAL #16-06 (UT2736-04546)

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7001 0320 0005 9387 1833

8/30/01 #4156C, 4157C & 4158C mailed together

Certified Fee $
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees $

Postmark Here

AUG 30 2001

Sent To: Mr. Micheal Safford
Operations Coordinator
Street, Apt. No., or PO Box No.: Petroglyph Operating Co., Inc.
P.O. BOX 607
City, State, ZIP+4: Roosevelt, UT 84066

PS Form 3800, January 2001 See Reverse for Instructions

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466
http://www.epa.gov/region08

AUG 30 2001

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Micheal Safford
Operations Coordinator
Petroglyph Operating Company, Inc.
P.O. Box 607
Roosevelt, UT 84066

RE: **Authorization to Continue Injection**
Ute Tribal #07-14
EPA Area Permit No. UT2736-00000
EPA Well Permit No. UT04495
Duchesne County, Utah

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Ground Water Program

enclosure: Step-Rate Test Procedure

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State of Utah Natural Resources
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Mr. Jerry Kenczka
Bureau of Land management
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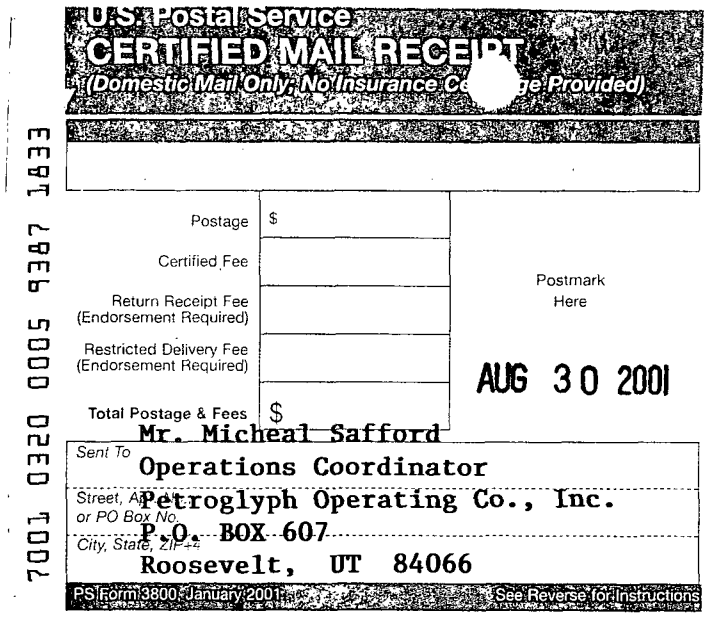
USEPA


U.S. Postal Service
CERTIFIED MAIL RECEIPT
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Sent To Mr. Micheal Safford
Operations Coordinator
Street, Apt. No., or PO Box No. Petroglyph Operating Co., Inc.
P.O. BOX 607
City, State, ZIP+4 Roosevelt, UT 84066

PS Form 3800, January 2001 See Reverse for Instructions

7001 0320 0005 9387 1833

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466
http://www.epa.gov/region08

MAR 1 2001

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Micheal Safford
Operations Coordinator
Petroglyph Operating Company, Inc.
P.O. Box 607
Roosevelt, UT 84066

RE: **Limited Authorization to Inject**
Ute Tribal #07-14
EPA Area Permit No. UT2736-00000
EPA Well Permit No. UT04495
Duchesne County, Utah

Dear Mr. Safford:

On December 14, 2000, Petroglyph Operating Company, Inc. (Petroglyph) submitted information required to fulfill the Environmental Protection Agency's (EPA) Prior to Commencing Injection (Additional Wells) requirements in the above-referenced Final Area Permit and Authorization to Add an Additional Well to the Area Permit. The **Part I (Internal) Mechanical Integrity** pressure test of November 11, 2000, a Well Rework Record (EPA Form No. 7520-12), and injection zone pore pressure determination have been reviewed and approved by the EPA.

EPA is hereby authorizing injection into the Ute Tribal #07-14 for a **limited period of up to one hundred eighty (180) calendar days**, effective upon receipt of this letter, herein referred to as the **'limited authorized period'**.

Because the cement bond log submitted for this well did not show an adequate interval of 80% or greater bond index through the confining zone above the perforated intervals (3,814 to 3,939'), the operator also is required to demonstrate **Part II (External) Mechanical Integrity (Part II MI)** within the limited authorized period. The demonstration shall be by temperature survey or other approved test. Approved tests for demonstrating

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE
DENVER, CO 80202-24
http://www.epa.gov/regio

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Authorization to
Inject - Initial
3/1/2001

MAR 1 2001

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An initial maximum surface injection pressure (MIP) **not to exceed 1900 psig** was determined for wells within Area Permit UT2736-00000. Please note that the maximum pressure used during the temperature survey or other approved test becomes the final permitted maximum injection pressure, or MIP, because Part II MI was demonstrated at that pressure. Therefore, it may be advantageous to run a step rate test (SRT) prior to conducting the temperature survey or other approved test.

Should the operator apply for an increase to the MIP at any future date, another demonstration of Part II MI must be conducted in addition to the step rate test. The operator must receive prior authorization from the Director in order to inject at pressures greater than the permitted MIP during the test(s).

If you have any questions in regard to the above action, please contact Paul Osborne at 303.312.6125. Results from temperature log or other Part II MI test should be mailed directly to the Ground Water Program Director, Mail Code 8P-W-GW.

Sincerely,

D. Edwin Hogle
Director
Ground Water Program

enclosure: Region 8 Guideline for conducting a temperature survey

cc w/o enclosures:

Mr. Roland McCook
Chairman
Uintah & Ouray Business Council

Ms. Elaine Willie
Environmental Director
Ute Indian Tribe

Mr. Gil Hunt
State of Utah Natural Resources
Division of Oil, Gas, and Mining

Mr. Jerry Kenczka
Bureau of Land management
Vernal District Office

Mr. Nathan Wiser, ENF-T
USEPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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MAR 1 2001

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Mr. Jerry Kenczka
Bureau of Land management
Vernal District Office

Mr. Nathan Wiser, ENF-T
USEPA

3/01/01 CW 3947C UTE TRIBAL #07-14-UT2736-04495

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- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
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Mr. Micheal Safford
Operations Coordinator
Petroglyph Operating Co., Inc.
P.O. BOX 607
Roosevelt, UT 84066

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Mr. Micheal Safford
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Petroglyph Operating Co., Inc.
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